REMARKS/ARGUMENT

The non-elected claims have been cancelled without prejudice to Applicant's right to file an appropriate continuing application directed thereto.

Monolithic ceramic electronic components formed from a plurality of ceramic layers and including internal circuit element films have step portions as a result of that construction. This results in different thicknesses at points in the part and as size of the individual layers has become reduced, the difference in thickness has become more apparent. To overcome this problem, an additional ceramic material has been used to substantially compensate for the spaces defined by the step-like sections formed by the internal films on the ceramic sheets. The compensating material is obtained by applying a ceramic paste containing a ceramic powder, binder, plasticizer and organic solvent. In order to form such a layer through printing with both a high accuracy and at a desired thickness, for instance, 2 μm or less, the dispersibility of the ceramic powder in the ceramic paste must be high. A number of methods have been developed to do so.

As pointed out on page 5 of the application, one possible method is disclosed in JP '925 and involves making a slurry by mixing a ceramic powder, binder and first organic solvent, mixing the resulting slurry with a second organic solvent having a higher boiling point and then heating the resultant mixture so as to remove only the first organic solvent. This process improves the dispersibility of the ceramic powder to some extent. However, since the paste contains the organic binder, the viscosity of the paste becomes high during mixing process and this imposes a limitation on improving the dispersibility of the ceramic powder. The present invention is designed to solve this problem.

It was surprisingly discovered that the process of JP '925 could achieve a paste of suitable viscosity if the introduction of the binder was delayed until after a primary dispersion of the ceramic powder and less volatile boiling point organic solvent had been achieved. Nothing in the prior art teaches or suggests that the viscosity of a ceramic slurry or paste can be controlled by this procedure.

The rejection of claims 1-13 and 17-19 under 35 USC 103 over JP '925 in view of GB '211 and Takeuchi is respectfully traversed.

The teachings of JP '925 have been discussed in the present application as well as noted above. It involves a process in which a ceramic paste for compensating for the spaces defined by the step-like section is prepared from a ceramic slurry. The process involves mixing the ceramic, organic binder and a first solvent, adding a second solvent of higher boiling point and then selectively removing the first solvent. Paragraph 0018 of this reference teaches that by replacing the first organic solvent in the dielectric slurry, the character of the resulting paste becomes the same as the character of the dielectric powder which is used in the dielectric slurry to form the individual plies, so that the sintering properties of each of the layers in the plies and the thickess adjustment layers become the same. There is no teaching or suggestion in this reference concerning controlling the viscosity of the paste by altering the time at which the binder is employed. Note further that there is no teaching or suggestion in this reference of filtering the secondary dispersion (containing the binder) before the first solvent is eliminated from the composition as recited in claim 6 of the present application. These deficiencies are not cured by the secondary references.

GB '211 relates to a method of forming complex shapes with a refractory material. The process involves forming a slurry of the refractory material, binder, plasticizer and a single solvent. In an example, the refractory material is wet milled with the solvent before the binder and plasticizer are added. The reference thus teaches that the refractory material of suitable size should be used and this can be achieved by wet milling. There is nothing in this reference which teaches or suggests that delayed addition of the binder can be used to control the viscosity of a paste. There is no apparent reason or motivation to combine this reference with JP '925. Nothing in either of the references teaches or suggests that delayed introduction of the binder affects the viscosity of the paste when a two solvent method is employed. Further, nothing in the combination teaches or suggests filtering the secondary dispersion before selective removal of the first solvent is begun.

The Takeuchi reference is subject to the same deficiencies as GB '211 but goes further and actually teaches away from the present invention. The reason is that this reference has teaching relating to viscosity adjustment of a ceramic slurry but tells those skilled in this art that such adjustment must be done by pressurized filtration to remove coarse aggregated particles from the slurry. There is not the slightest hint in the reference that viscosity control can be achieved by using a two solvent method coupled with delayed introduction of the binder.

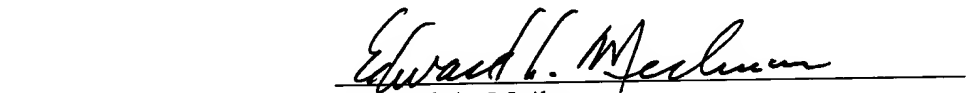
In light of all of the foregoing considerations, withdrawal of the rejection is respectfully solicited.

Claims 14 and 15 were rejected under 35 USC 103 over the same combination in further view of Tokuda. This rejection is also respectfully traversed.

The additional reference, Tokuda, has not been cited to overcome any deficiency in the primary combination of references but rather to disclose an inductor. Sine it does not cure those deficiencies, its combination with the rest of the references cannot render the claimed invention obvious.

In light of all of the foregoing considerations, it is respectfully that this application is now in condition to be allowed and the early issuance of a Notice of Allowance is respectfully solicited.

Respectfully submitted,



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